

Notes on *Cyranotermes* Araujo, with Description of a New Species (Isoptera, Termitidae, Nasutitermitinae).

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**ABSTRACT** - *Cyranotermes glaber*, a new species of termite from eastern Amapá State, Brazil is described. A key based on the soldier caste is provided for the identification of the three known species of *Cyranotermes*. Drawings of the soldier's head of the three species, the worker's head and mandibles of *C. glaber*, and the enteric valve armature of *C. glaber* and *C. caete* are presented. The nests of *C. glaber* and *C. caete* are described, with drawings of the former.

**KEY WORDS:** *Cyranotermes*, Isoptera, Termitidae, Nasutitermitinae, termites, taxonomy.

**RESUMO** - *Cyranotermes glaber*, nova espécie de cupim do Leste do Estado do Amapá, Brasil é descrita. É fornecida uma chave baseada nos soldados para a identificação das três espécies conhecidas de *Cyranotermes*. São apresentados desenhos da cabeça dos soldados das três espécies, da cabeça e das mandíbulas do operário de *C. glaber*, e da armadura da válvula entérica de *C. glaber* e de *C. caete*. Os ninhos de *C. glaber* e de *C. caete* são descritos, com desenhos do primeiro.

**PALAVRAS-CHAVE:** *Cyranotermes*, Isoptera, Termitidae, Nasutitermitinae, cupins, taxonomia.

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## INTRODUCTION

*Cyranotermes* Araujo, 1970 was described including only one species, *C. timuassu*, a soil-feeding nasute found in the cerrado vegetation of Central and Southeastern Brazil in mounds constructed by other species, mainly *Cornitermes* spp. A second species, *C. caete* Cancelló, 1987, is known only from the forests of the Serra dos Carajás, Pará State, Brazil. The curious nest of *C. timuassu* was described by Mathews (1977) as: "The peculiar nest of this species, made in the mineral soil of termite mounds of other species, consist of a series of flask-like cells (1-2 cm diameter) which the termites enter through a termite-sized hole down the middle of an inwards turned neck with a widened flange at its opening inside the flask". Drawings of the nest of *C. timuassu* may be found in Cancelló (1987).

Based on the morphology of the worker digestive tube, Fontes (1987a) concluded that *Cyranotermes* is "quite distinct from the other 13 genera of soil-feeding nasutes from the Neotropical and Ethiopian Regions", although the worker mandibles are similar to that of the Ethiopian genera *Postsubulitermes*, *Mimeuterme*s and *Tarditermes*. The phylogenetic relations of *Cyranotermes* are still unclear.

Here I describe a new species of *Cyranotermes* from Amapá State, Brazil and the nest and enteric valve armature of *C. caete*. A key based on the soldier caste is provided for the identification of the 3 known species of the genus. The terminology used in this paper for the mandibles and digestive tube is the same as Fontes (1987 a,b).

KEY TO THE SOLDIERS OF *Cyranotermes*

1. Head with four bristles on vertex and several ones at tip of nasus (Figs. 1 and 4) ..... *C. timuassu*  
 Head without bristles on vertex and with only four bristles at tip of nasus ..... 2
2. Ratio length of nasus / length of head without nasus less than or equal to 1.0. Head capsule rounded from dorsal view (Figs. 2 and 5) ..... *C. glaber*, sp. n.  
 Ratio length of nasus / length of head without nasus greater than 1.2; head capsule elongated from dorsal view (Figs. 3 and 6)... *C. caete*



*Cyranotermes caete* Cancelló  
*Cyranotermes caete* Cancelló, 1987:253-255.

SOLDIER - figs. 3 & 6.

WORKER - enteric valve armature (fig. 12) similar to *C. glaber*, but with smaller swellings.

NEST - I collected the type material of this species. In my field notes the nest is described as interconnected subterranean flask-like cells of 3 cm diameter made of soil. In the notes of lot number MPEG 2444 the nest is described as: "subterranean, rounded cells found at 5 centimeters below ground with 3 to 4 cm diameter and a distance of about 10 centimeters between 2 cells; immature individuals were found but the royal pair was not" (my translation from the Portuguese).

MATERIAL EXAMINED - BRAZIL. Pará State, Serra Norte, Carajás. Lot number MPEG 3310 in the collection of Museu Paraense Emílio Goeldi, VII.1985, R. Constantino col. (= part of lot number MZUSP 8711 in the collection of Museu de Zoologia da Universidade de São Paulo: paratypes soldiers and workers); nr. MPEG 2444, 26.I.1986, A.G. Bandeira col.

*Cyranotermes glaber*, sp. n.

TYPE MATERIAL - BRAZIL. Amapá State, Macapá, Parque Zoobotânico. Type colony nr. MPEG 3250 (holotype soldier and paratypes soldiers and workers), 29.X.1989, R. Constantino col.; nr. MPEG 3237 (paratypes soldiers and workers), 28.X.1989, R. Constantino col.; part of lot MPEG 3237 deposited in the collection of Museu de Zoologia da USP under nr. MZUSP 9221 (paratypes soldiers and workers).

IMAGO - Unknown.

SOLDIER (Figs. 2 & 5) - Head capsule rounded from dorsal view, widest in the middle. Nasus conical. Labrum short and wide. Vestigial mandibles without points. Antenna with 13 segments: I the largest one, III larger than II, IV, V and VI, IV the smallest one, V larger than II, VI larger than V, and the following segments about the same length. Anterior margin of pronotum rounded, with very slight incision in the middle. Head capsule without hairs or bristles. Nasus with 4 bristles and a few very



short hairs on tip. Postmentum without bristles. Pronotum with numerous short hairs on anterior margin. Legs with scattered bristles; tibiae with spines (approximately 10). Tibial spurs 2:2:2. Four distal tergites with scattered bristles, and the remainder without bristles. Sternites with scattered bristles on surface and a row of long bristles on posterior margin. Head capsule yellow to orange yellow. Nasus ferruginous orange, darker toward tip. Antennae orange. Pronotum yellow. Tergites and sternites yellowish, transparent.

Measurements (in millimeters) of 10 soldiers from the 2 samples: 1. length of head to tip of nasus 1.80-1.98; 2. length of nasus 0.86-0.99; 3. width of head 0.80-0.86; 4. width of pronotum 0.50-0.53; 5. length of hind tibia 1.18-1.23.

**WORKER** (Figs. 7-11) - Monomorphic. Head as in Figs. 7 & 8. Antenna with 14 segments. Postclypeus inflated. Head with scattered bristles and some short hairs. Postclypeus with four bristles. Labrum with 8 bristles. Tergites and sternites with hairs and short bristles on surface. Sternites with a row of long bristles on posterior margin. Head, pronotum and legs yellowish white and abdomen transparent. Mandibles as in Figs. 9 & 10. Left mandible index about 1.7. Enteric valve armature well sclerotized, 3 swellings of 1st order alternating with 3 swellings of 2nd order, all with a rigid flange which projects into the lumen of the valve. Margins of the flanges with about 30 spines on swellings of 1st order and about 20 spines on swellings of 2nd order (Fig. 11).

**COMPARISONS** - *C. glaber* is closely related to *C. caete* as indicated by the similarities of the mandibles and enteric valve armature of their workers and the chaetotaxy of their soldiers. The soldier of *C. caete* is distinguished by its narrower head and proportionally longer nasus and legs. The enteric valve armature of *C. caete* is similar, but the swellings are smaller, with less numerous spines and with less difference between swellings of 1st and 2nd order (Fig. 12). The soldier of *C. timuassu* is easily distinguished by its larger size, the presence of 4 bristles on the top of the head and of more numerous bristles on the tip of the nasus. The worker's mandibles of *C. timuassu* have larger apical teeth (left mandible index about 2.6) and the enteric valve armature has larger swellings, with larger spines.

**BIOLOGY** - *C. glaber* was collected in disturbed forest of the eastern region of Amapá State. The nests were found under rotten logs, a few centimeters below ground, and consist of a series of interconnected flask-like cells (Figs. 13 & 14) about 5 cm of diameter, with many fine roots. This species, like the others of the genus, is a humus feeder.

ETYMOLOGY - The specific name derives from *glaber* (L., "hairless").

*Cyranotermes timuassu* Araujo

*Cyranotermes timuassu* Araujo, 1970:366; Mathews, 1977:239 (redescription); Canello, 1987:251 (nest); Fontes, 1987a (digestive tube); 1987b (imago and worker mandibles).

SOLDIER - figs. 1 & 4.

MATERIAL EXAMINED - BRAZIL. Mato Grosso State, Chapada dos Guimarães. Lot nr. MPEG 3311, 12.II.1976, R.L. Araujo col. (= part of lot nr. MZUSP 6735).

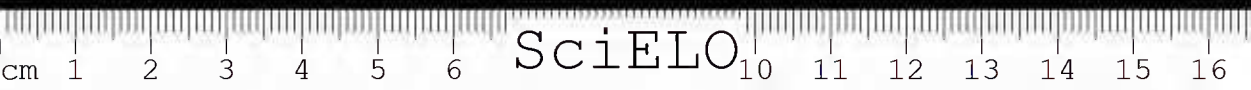
## DISCUSSION

*Cyranotermes* is a well-defined genus. The shape of soldier head and the very long nasus recalls *Angularitermes*, which is easily distinguished by the points of the mandibles and the numerous bristles on the head. The peculiar nests of the 3 known species are unique and no similar construction is known among Neotropical termites. The nest may be considered as an apomorphic character of the genus.

The incomplete marginal dentition of the worker mandible is similar only to some Ethiopian genera, but an undescribed species (and probably new genus) that I collected in Amapá (lot nr. MPEG 3267) has almost identical worker mandibles and enteric valve armature to *Cyranotermes* though the soldier's head has a much different shape.

*C. caete* and *C. glaber* seem to be more closely related than either is to *C. timuassu*. This is indicated by the similarities of the mandibles (left mandible index almost identical), the chaetotaxy of the soldiers and the forest habitat. The left mandible index is not a good character for the genus since it is considerably greater for *C. timuassu* than for the other 2 species.

Except for *C. timuassu*, the geographical distribution of the genus is poorly known. *C. caete* and *C. glaber* are known only from the type-localities. The subterranean habit of these 2 species makes difficult to collect them, contributing to their rarity in collections.

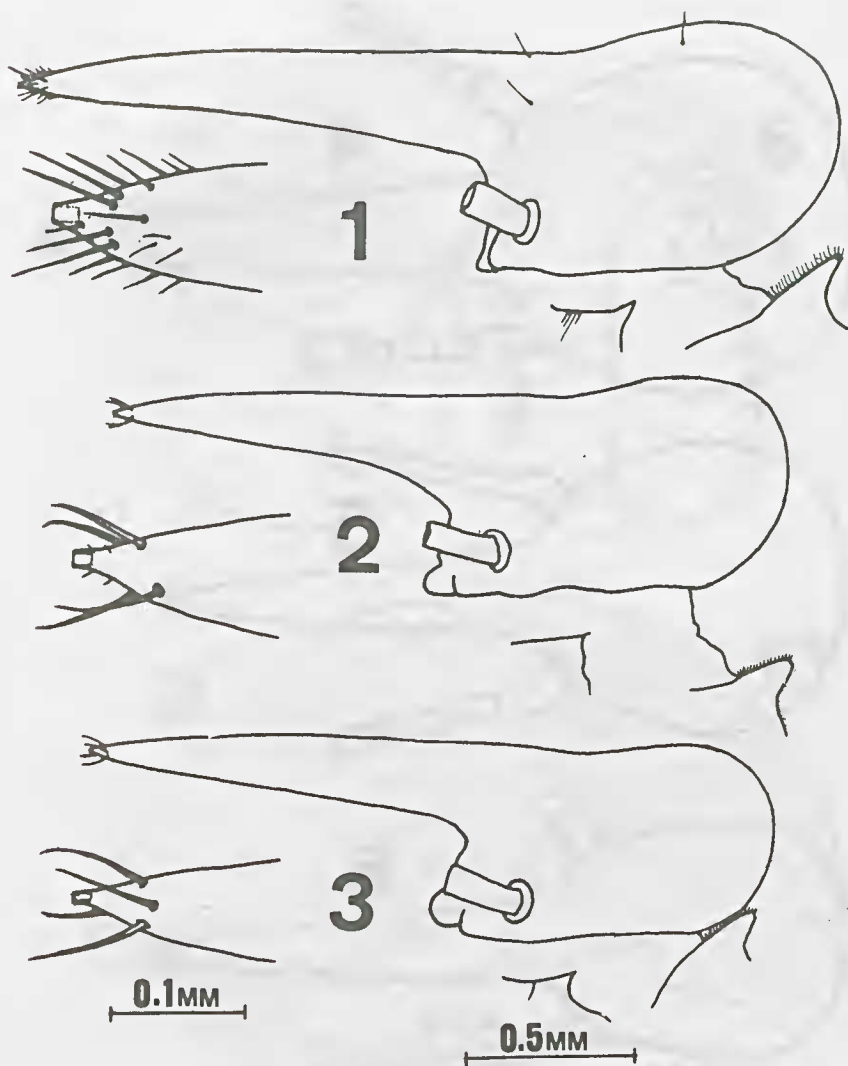


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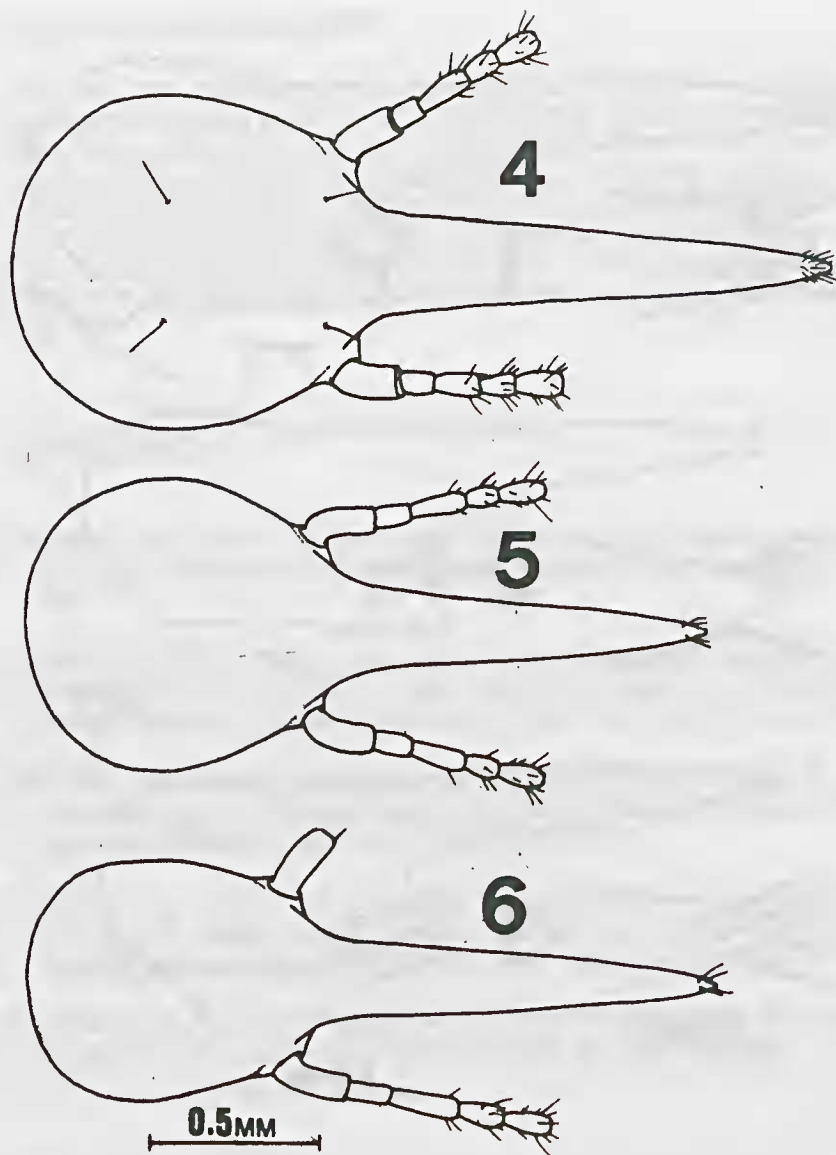
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Figures 1-3

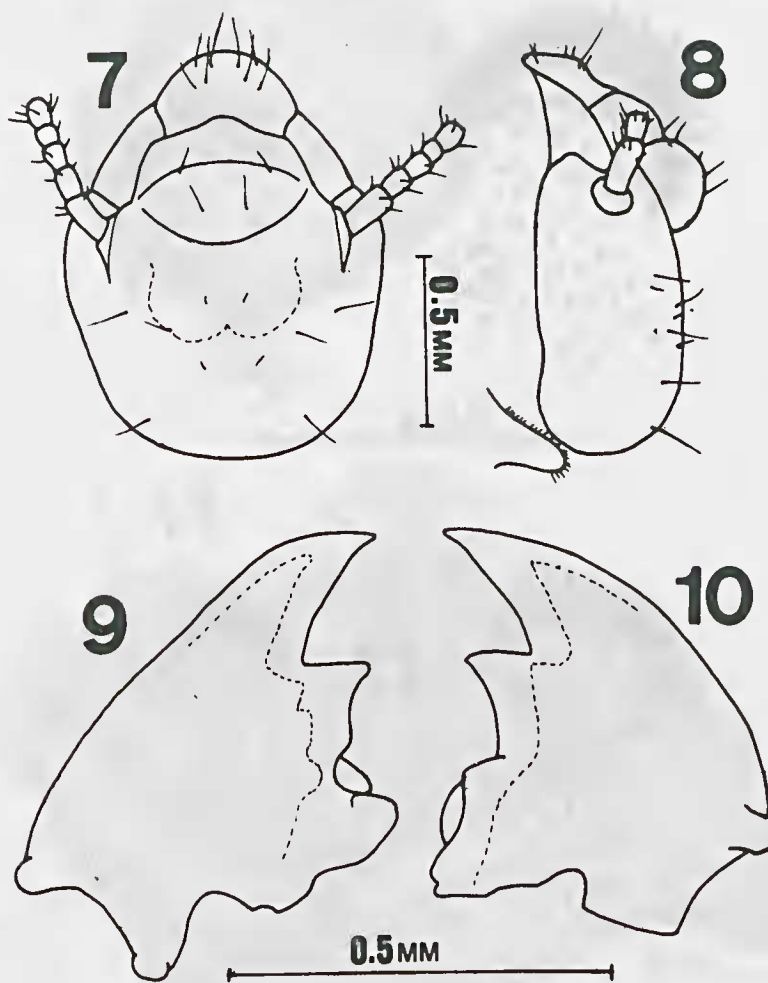
*Cyanotermes* - soldier head in profile; tip of nasus in detail.  
1. *C. timuassu*; 2. *C. glaber*, sp. n.; 3. *C. caete*.



Figures 4-6

*Cyanoterмес* - soldier head from dorsal view.  
4. *C. timuassu*; 5. *C. glaber*, sp. n.; 6. *C. caete*.

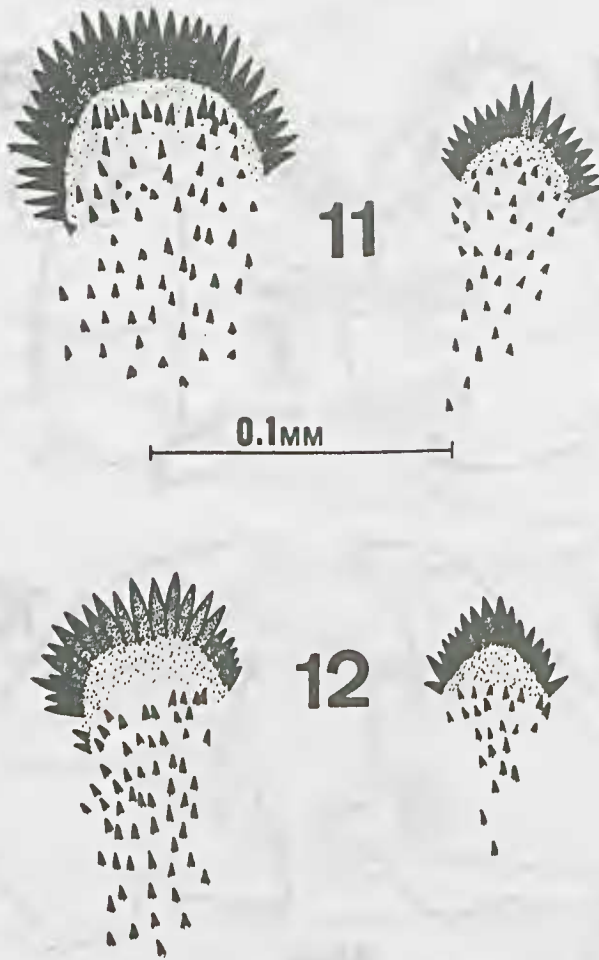




Figures 7-10

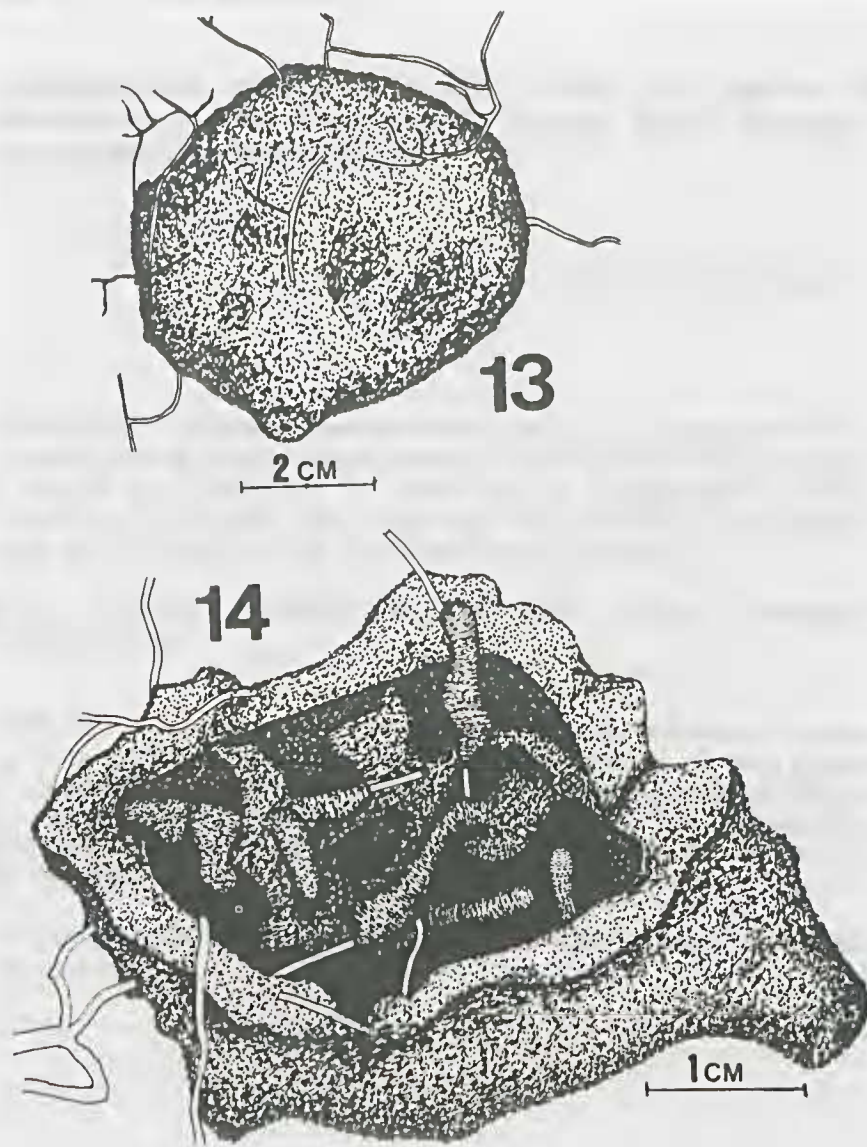
*Cyranotermes glaber*, sp. n. - worker.

7. head - dorsal view; 8. head - profile; 9. left mandible; 10. right mandible.



Figures 11-12

*Cyanoterмес* - worker: enteric valve armature.  
11. *C. glaber*, sp. n.; 12. *C. caete*.



Figures 13-14

*Cyranotermes glaber* - nest cell.

13. closed cell, showing one opening; 14. opened cell, showing the internal structure.